

### **Amendments to the Claims:**

This listing of claims will replace all prior versions, and listings, of claims in the application:

### **Listing of Claims:**

Claim 1 (currently amended):        A method comprising:  
receiving a satellite signal spectrum in a receiver;  
receiving in the receiver a selection signal for a signal channel corresponding to a channel within the satellite signal spectrum selected by a user; and  
determining a local oscillator (LO) frequency for the signal channel ~~a signal channel~~  
~~corresponding to a channel selected by a user within the satellite signal spectrum, the LO~~  
frequency selected from a first LO selection region and a second LO selection region, each of  
which are adjacent to the signal channel and being outside of a signal band of the signal channel  
and away from a center of a widest signal channel by greater than half of a signal band of the  
widest signal channel and less than half of a passband width of a baseband filter of the receiver,  
the LO frequency used to downmix the signal channel to a frequency near DC.

Claim 2 (canceled)

Claim 3 (currently amended):        The method of claim [[2]] 1, further comprising  
selecting the LO frequency to be outside of the signal band of the signal channel by at least a first  
amount to avoid 1/f noise and a DC offset effect.

Claim 4 (original):        The method of claim 1, further comprising determining an error  
value corresponding to a frequency error of a LO generating the LO frequency.

Claim 5 (original):        The method of claim 4, further comprising storing the error value  
in a storage medium.

Claim 6 (original): The method of claim 1, wherein the baseband filter has a smallest passband width that is wider than a width of the widest signal channel and half of a LO-step frequency, wherein the receiver comprises one tuner.

Claim 7 (original): The method of claim 1, further comprising:  
mixing the satellite signal spectrum with the LO frequency to obtain a downmixed signal;  
and  
filtering the downmixed signal using the baseband filter.

Claim 8 (original): The method of claim 7, further comprising selecting the LO frequency to cause a center frequency of the downmixed signal to be at a center of a passband of the baseband filter.

Claim 9 (original): The method of claim 1, further comprising determining a new LO frequency for a new signal channel within the satellite signal spectrum, the new LO frequency being outside of a signal band of the new signal channel and an offset region surrounding the new signal channel.

Claim 10 (original): The method of claim 9, further comprising selecting the new LO frequency so that it does not interfere with one or more existing LO frequencies.

Claim 11 (original): The method of claim 10, further comprising selecting the new LO frequency from a LO candidate selection region that is outside a crosstalk region surrounding the one or more existing LO frequencies.

Claim 12 (original): The method of claim 11, wherein the LO candidate selection region is outside a crosstalk region surrounding harmonics of the one or more existing LO frequencies.

Claim 13 (original): The method of claim 11, further comprising maintaining parameters of existing signal channels when tuning the new signal channel.

Claims 14 – 25 (canceled)

Claim 26 (currently amended): An apparatus comprising:

a first tuner to receive a satellite signal spectrum;

a first oscillator to generate a first local oscillator (LO) frequency to be mixed with the satellite signal spectrum to obtain a first signal channel corresponding to a channel selected by a user; and

a selection circuit to determine the first LO frequency, wherein the first LO frequency is selected from a first and second LO selection region adjacent to the first signal channel and outside of a signal band of the first signal channel and within a passband width of a first baseband filter of the first tuner, the passband width corresponding to a frequency width of the first signal channel and one of the first and second LO selection regions.

Claim 27 (previously presented): The apparatus of claim 26, further comprising:

a second tuner to receive the satellite signal spectrum; and

a second oscillator to generate a second LO frequency to be mixed with the satellite signal spectrum to obtain a second signal channel corresponding to a second channel selected by the user.

Claim 28 (original): The apparatus of claim 27, wherein the selection circuit is adapted to determine a new LO frequency, wherein the new LO frequency does not interfere with an existing LO frequency.

Claim 29 (original): The apparatus of claim 28, wherein the selection circuit determines the new LO frequency based on a crosstalk region of the existing LO frequency and a frequency location of an existing signal channel and a new signal channel.

Claim 30 (previously presented): The apparatus of claim 27, further comprising:

a third tuner to receive the satellite signal spectrum; and

a third oscillator to generate a third LO frequency to be mixed with the satellite signal spectrum to obtain a third signal channel corresponding to a third channel selected by the user.

Claim 31 (original): The apparatus of claim 30, wherein the selection circuit is adapted to determine the third LO frequency, wherein the third LO frequency does not interfere with the first LO frequency or the second LO frequency, wherein the apparatus comprises three tuners.

Claim 32 (original): The apparatus of claim 30, wherein the selection circuit is adapted to select one of the first LO frequency or the second LO frequency for use in obtaining the third signal channel from the satellite signal spectrum, wherein the apparatus further comprises a multiplexer.

Claim 33 (previously presented): The apparatus of claim 30, further comprising:  
a fourth tuner to receive the satellite signal spectrum; and  
a fourth oscillator to generate a fourth LO frequency to be mixed with the satellite signal spectrum to obtain a fourth signal channel corresponding to a fourth channel selected by the user.

Claim 34 (original): The apparatus of claim 33, wherein the selection circuit is adapted to determine the fourth LO frequency, wherein the fourth LO frequency does not interfere with the first LO frequency, the second LO frequency, or the third LO frequency.

Claim 35 (original): The apparatus of claim 33, wherein the selection circuit is adapted to select one of the first LO frequency, the second LO frequency, or the third LO frequency for use in obtaining the fourth signal channel from the satellite signal spectrum, wherein the apparatus further comprises a multiplexer.

Claim 36 (original): The apparatus of claim 33, wherein the first tuner, the second tuner, the third tuner, and the fourth tuner are adapted on a single integrated circuit.

Claims 37 – 42 (canceled)

Claim 43 (previously presented): The apparatus of claim 26, wherein the selection circuit is to determine the first LO frequency to be away from a center of the first signal channel by greater than half of the signal band of the first signal channel and less than half of a passband width of the first baseband filter.

Claim 44 (currently amended): A system comprising:  
first analog tuning circuitry to mix a satellite signal spectrum with a first local oscillator (LO) frequency to ~~obtain~~ downmix a first signal channel corresponding to a channel selected by a user to a frequency near DC, and first LO circuitry to determine the first LO frequency from a range of frequencies that is outside of a signal band of the first signal channel; and  
first digital tuning circuitry to receive the first signal channel, convert the first signal channel to a first digital signal and to digitally filter the first digital signal using a first controllable frequency generated by a first numerically controlled oscillator (NCO) that receives a center frequency for the first signal channel.

Claim 45 (currently amended): The system of claim 44, further comprising:  
second analog tuning circuitry to mix the satellite signal spectrum with a second LO frequency to ~~obtain~~ downmix a second signal channel corresponding to a second channel selected by the user to a frequency near DC, and second LO circuitry to determine the second LO frequency from a range of frequencies that is outside of a signal band of the second signal channel; and  
second digital tuning circuitry to receive the second signal channel, convert the second signal channel to a second digital signal and to digitally filter the second digital signal using a second controllable frequency generated by a second NCO that receives a center frequency for the second signal channel.

Claim 46 (previously presented): The system of claim 45, wherein the first analog tuning circuitry, the first digital tuning circuitry, the second analog tuning circuitry and the second digital tuning circuitry are integrated on a single integrated circuit.